What Is Claimed Is:

1.   A method for improving cardiac performance associated with a current set of N pacing parameters by adjusting the N cardiac pacing parameters, where N is an integer greater than one, the method comprising the steps of:

   (a)   determining cardiac performance associated with the current set of N pacing parameters;

   (b)   repeating steps (c) through (e) for i = one to N, where i represents which of the N pacing parameter is being adjusted;

   (c)   incrementing an ith pacing parameter in the current set of N pacing parameters based on a corresponding i^{th} increment value to thereby produce an ith set of test pacing parameters;

   (d)   determining a cardiac performance associated with the ith set of test pacing parameters;

   (e)   updating the ith increment value based on the cardiac performance associated with the ith set of test pacing parameters; and

   (f)   updating the current set of N pacing parameters based on the updated increment values determined in step (e).

2.   The method of claim 1, wherein step (e) comprises the step of updating the ith increment value based on the difference between the cardiac performance associated with the current set of N pacing parameters and the cardiac performance associated with the ith set of test pacing parameters.

3.   The method of claim 1, wherein step (e) comprises the step of updating the ith increment value based on:

   the ith increment value used in step (c), and

the difference between the cardiac performance associated with the current set of N pacing parameters and the cardiac performance associated with the ith set of test pacing parameters.

4. The method of claim 3, wherein step (e) comprises the step of updating the ith increment value based on the equation:

$$\delta_i \leftarrow k \bullet \delta_i \bullet (P_i - P_0)$$

where,

  δ_i is the ith increment value,

  k is a predetermined constant scale factor,

  P_i is a measure of the cardiac performance associated with i^{th} set of test pacing parameters as determined in step (d),

  P_0 is a measure of the cardiac performance associated with the current set of N pacing parameters as determined in step (a), and

  $\leftarrow$ denotes replacement.

5. The method of claim 1, wherein step (e) comprises the step of updating the ith increment value based on one of the following equations:

  (1) $\delta_i \leftarrow \delta_i$ if $P_i > P_0$, otherwise $\delta_i \leftarrow -\delta_i$, and

  (2) $\delta_i \leftarrow \delta_i$ if $P_i \geq P_0$, otherwise $\delta_i \leftarrow -\delta_i$,

where,

  δ_i is the ith increment value,

  P_i is a measure of the cardiac performance associated with i^{th} set of test pacing parameters as determined in step (d),

  P_0 is a measure of the cardiac performance associated with the current set of N pacing parameters as determined in step (a), and

  $\leftarrow$ denotes replacement.

6.   The method of claim 1, further comprising the step of: (g)   repeating steps (a) through (f).

7.   The method of claim 1, further comprising the step of:

(g)   repeating steps (a) through (f) until each of the updated increment values determined in step (e) is less than a predetermined threshold value.

8.   The method of claim 1, further comprising the step of:

(g)   repeating steps (a) through (f) until a difference between the cardiac performance associated with the current set of N pacing parameters and the cardiac performance associated with the ith set of test pacing parameters is less than a predetermined threshold value for all i between 1 and N inclusive.

9.   A method for improving cardiac performance associated with a current set of N pacing parameters by adjusting the N cardiac pacing parameters, where N is an integer greater than 1, the method comprising the steps of:

(a)   determining cardiac performance associated with the current set of N pacing parameters;

(b)   incrementing the ith pacing parameter in the current set of N pacing parameters based on an ith increment value, to thereby produce an ith set of test pacing parameters, wherein i is an integer between 1 and N inclusive;

(c)   determining cardiac performance associated with the ith set of test pacing parameters;

(d)   updating the ith increment value;

(e)   updating the current set of N pacing parameters based on the updated i^{th} increment value determined in step (d); and

(f)   repeating steps (a) through (e) for all N pacing parameters.

10.   The method of claim 9, wherein step (d) comprises the step of updating the ith increment value based on the difference between the cardiac performance associated with the current set of N pacing parameters and the cardiac performance associated with the ith set of test pacing parameters.

11.   The method of claim 9, wherein step (d) comprises the step of updating the ith increment value based on:

the ith increment value used in step (c), and

the difference between the cardiac performance associated with the current set of N pacing parameters and the cardiac performance associated with the ith set of test pacing parameters.

12.   The method of claim 11, wherein step (d) comprises the step of updating the ith increment value based on the equation:

$$\delta_i \leftarrow k \bullet \delta_i \bullet (P_t - P_0)$$

where,

δ_i is the ith increment value,

k is a predetermined constant scale factor,

P_t is a measure of the cardiac performance associated with i^{th} set of test pacing parameters as determined in step (d),

P_0 is a measure of the cardiac performance associated with the current set of N pacing parameters as determined in step (a), and

$\leftarrow$ denotes replacement.

13.   The method of claim 9, wherein step (d) comprises the step of updating the ith increment value based on one of the following equations:

(1) $\delta_i \leftarrow \delta_i$ if $P_t > P_0$, otherwise $\delta_i \leftarrow -\delta_i$, and

(2) $\delta_i \leftarrow \delta_i$ if $P_t \geq P_0$, otherwise $\delta_i \leftarrow -\delta_i$,

where,

δ_i is the ith increment value,

P_i is a measure of the cardiac performance associated with i^{th} set of test pacing parameters as determined in step (d),

P_0 is a measure of the cardiac performance associated with the current set of N pacing parameters as determined in step (a), and

$\leftarrow$ denotes replacement.

14.   The method of claim 9, further comprising the step of:

(g)   repeating steps (a) through (f).

15.   The method of claim 9, further comprising the step of:

(g)   repeating steps (a) through (f) until each of the updated increment values determined in step (d) is less than a predetermined threshold value.

16.   The method of claim 9, further comprising the step of:

(g)   repeating steps (a) through (f) until a difference between the cardiac performance associated with the current set of N pacing parameters and the cardiac performance associated with the ith set of test pacing parameters is less than a predetermined threshold value for all i between 1 and N inclusive.

17.   A method for improving cardiac performance associated with a current set of N pacing parameters by adjusting the N cardiac pacing parameters, where N is an integer, the method comprising the steps of:

(a)   determining cardiac performance associated with the current set of N pacing parameters;

(b)   determining a random test set of N pacing parameters;

(c)   determining cardiac performance associated with the test set of N pacing parameters; and

(d)   replacing the current set of N pacing parameters with the test set of N pacing parameters if the cardiac performance associated with the test set of N pacing parameters is greater than the cardiac performance associated with the current set of N pacing parameters.

18.   The method of claim 17, wherein step (b) comprises selecting N values from a plurality of predefined values, the selected N values comprising the random test set of N pacing parameters.

19.   The method of claim 17, further comprising the step of:

(f)   repeating steps (a) through (e).

20.   The method of claim 17, further comprising the step of:

(f)   repeating steps (a) through (e) until, for a predetermined number of consecutive times, the cardiac performance associated with the test set of N pacing parameters is not greater than the cardiac performance associated with the current set of N pacing parameters.

21.   The method of claim 17, wherein step (b) comprises the steps of:

i.   determining a set of N random increment values; and

ii.   incrementing the pacing parameters in the current set of N pacing parameters using the set of N random increment values, to thereby produce the random test set of N pacing parameters.

22.   The method of claim 21, wherein step (b)i. comprises selecting N values from a plurality of predefined values, the selected N values comprising the set of N random increment values.

23. The method of claim 21, further comprising the step of: (f) repeating steps (a) through (e).

24. The method of claim 21, further comprising the step of:

(f)   repeating steps (a) through (e) until, for a predetermined number of consecutive times, the cardiac performance associated with the test set of N pacing parameters is not greater than the cardiac performance associated with the current set of N pacing parameters.

25. A device for improving cardiac performance associated with a current set of N pacing parameters by adjusting the N cardiac pacing parameters, where N is an integer greater than one, the device comprising:

a sensing circuit that determines cardiac performance associated the current set of N pacing parameters and cardiac performance associated with sets of test pacing parameters; and

a processor that for i = one to N increments an ith pacing parameter in the current set of N pacing parameters based on a corresponding i^{th} increment value to thereby produce an ith set of test pacing parameters, and

updates the ith increment value based on the cardiac performance associated with the ith set of test pacing parameters as determined by the sensing circuit,

wherein the processor updates the current set of N pacing parameters based on the updated increment values.

26. The device of claim 25, wherein the processor repeatedly updates the current set of N pacing parameters.

27. The device of claim 25, wherein the processor repeatedly updates the current set of N pacing parameters until each of the updated increment values is less than a predetermined threshold value.

28.   The device of claim 25, wherein the processor employs the equation:

$$\delta_i \leftarrow k \bullet \delta_i \bullet (P_t - P_0)$$

to update i^{th} increment value, where

δ_i is the ith increment value,

k is a predetermined constant scale factor,

P_t is a measure of the cardiac performance associated with i^{th} set of test pacing parameters as determined by the sensing circuit,

P_0 is a measure of the cardiac performance associated with the current set of N pacing parameters as determined by the sensing circuit, and

$\leftarrow$ denotes replacement.

29.   The device of claim 25, wherein the processor employs one of the following equations to update the ith increment value: (1) $\delta_i \leftarrow \delta_i$ if $P_t > P_0$, otherwise $\delta_i \leftarrow -\delta_i$, and

(2) $\delta_i \leftarrow \delta_i$ if $P_t \geq P_0$, otherwise $\delta_i \leftarrow -\delta_i$,

where,

δ_i is the ith increment value,

P_t is a measure of the cardiac performance associated with i^{th} set of test pacing parameters as determined by the sensing circuit,

P_0 is a measure of the cardiac performance associated with the current set of N pacing parameters as determined by the sensing cirucuit, and

$\leftarrow$ denotes replacement.

30.   A device for improving cardiac performance associated with a current set of N pacing parameters by adjusting the N cardiac pacing parameters, where N is an integer greater than one, the device comprising:

a sensing circuit that determines cardiac performance associated the current set of N pacing parameters and cardiac performance associated with sets of test pacing parameters; and

a processor that for $i =$ one to N

increments an ith pacing parameter in the current set of N pacing parameters based on a corresponding i^{th} increment value to thereby produce an ith set of test pacing parameters,

updates the ith increment value based on the cardiac performance associated with the ith set of test pacing parameters as determined by the sensing circuit, and

updates the current set of N pacing parameters based on the updated i^{th} increment value.

31.   The device of claim 30, wherein the processor repeatedly updates the current set of N pacing parameters.

32.   The device of claim 30, wherein the processor repeatedly updates the current set of N pacing parameters until each of the updated increment values is less than a predetermined threshold value.

33.   The device of claim 30, wherein the processor employs the equation:

$$\delta_i \leftarrow k \bullet \delta_i \bullet (P_t - P_0)$$

to update i^{th} increment value, where

δ_i is the ith increment value,

k is a predetermined constant scale factor,

P_t is a measure of the cardiac performance associated with i^{th} set of test pacing parameters as determined by the sensing circuit,

P_0 is a measure of the cardiac performance associated with the current set of N pacing parameters as determined by the sensing circuit, and

← denotes replacement.

34.   The device of claim 30, wherein the processor employs one of the following equations to update the ith increment value: (1) $\delta_i \leftarrow \delta_i$ if $P_i > P_0$, otherwise $\delta_i \leftarrow -\delta_i$, and

(2) $\delta_i \leftarrow \delta_i$ if $P_i \geq P_0$, otherwise $\delta_i \leftarrow -\delta_i$,

where,

δ_i is the ith increment value,

P_i is a measure of the cardiac performance associated with i^{th} set of test pacing parameters as determined by the sensing circuit,

P_0 is a measure of the cardiac performance associated with the current set of N pacing parameters as determined by the sensing cirucuit, and

← denotes replacement.

35.   A device for improving cardiac performance associated with a current set of N pacing parameters by adjusting the N cardiac pacing parameters, where N is an integer, the device comprising: a sensing circuit that determines cardiac performance associated the current set of N pacing parameters and cardiac performance associated with random sets of test pacing parameters;

a random value generator that generates random test sets of N pacing parameters; and

a processor that replaces the current set of N pacing parameters with a random test set of N pacing parameters if the cardiac performance associated with the random test set of N pacing parameters is greater than the cardiac performance associated with the current set of N pacing parameters.

36.   The device of claim 35, wherein the random value generator selects N values from a plurality of predefined values, the selected N values comprising the random test set of N pacing parameters.

37.   The device of claim 35, wherein the processor repeatedly updates the current set of N pacing parameters until, a predetermined number of consecutive times, the cardiac performance associated with the test set of N pacing parameters is not greater than the cardiac performance associated with the current set of N pacing parameters.